



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,118	09/23/2003	Steven R. Knight	2802-135-079	9506
7590 01/11/2007 Christopher H. Hunter PARKER-HANNIFIN CORPORATION 6035 Parkland Boulevard Cleveland, OH 44124-4141			EXAMINER KURTZ, BENJAMIN M	
			ART UNIT 1723	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	01/11/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/669,118

Applicant(s)

KNIGHT, STEVEN R.

Examiner

Benjamin Kurtz

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18, 20 and 22 is/are rejected.
- 7) ☒ Claim(s) 17, 19 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-16, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell U.S. Patent No. 6 139 738 in view of Cline et al. US 6 572 768 in view of Mack U.S. Patent No. 7 014 766.

Regarding claims 1 and 15, Maxwell (738) discloses a filter element (78) comprising: a ring of filtration media (80) circumscribing a central axis and defining a central cavity (82), the filtration media ring having a first and second end (fig. 2, column 5, lines 3-8), a first circular end cap (88) having an inner surface sealingly bonded to the first end of the media ring (80) (column 5, lines 12-17), the first end cap (88) including an annular body portion defining a central opening into the central cavity (82) of the media (80), a sealing device (92) bounding the central opening (fig. 2, column 5, lines 12-17) and a second circular end cap (94) sealingly bonded to the second end of the media ring (80) (column 5, lines 20-22), a retaining device (98) fixed to and integral with the second end cap (94) and projecting outwardly therefrom (column 5, lines 25-27). Maxwell (738) does not disclose a vent orifice in the annular body of the first end cap into the central cavity or an orientation device permanently fixed to and integral with the first end cap and projecting radially outward therefrom. Mack (766) teaches a filter

Art Unit: 1723

element including a vent orifice (36) into the central cavity in the annular body of a first end cap (15') spaced radially outward from a sealing device (21) intermediate the sealing device (21) and a media ring (4') (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the vent orifice as taught by Mack (766) because the vent allows air trapped in the fuel is not discharged to the external environment nor is it conveyed toward the injection pump (col. 1, lines 45-56). Cline (768) teaches a filter element (14) with an orientation device (78) permanently fixed to and integral with a first end cap (48) and projecting radially outward therefrom (fig. 2 and 2a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the orientation device of Cline (768) because the device blocks rotation of the filter module relative to the housing to align the filter element within the housing (col. 1, lines 16-30).

Regarding claims 2-4, Maxwell (738) further teaches the sealing device (92) comprises a flexible lip seal bounding the central opening of the first end cap (88) (fig. 2); the flexible lip seal (92) being unitary with the first end cap (88) (column 5, lines 14-17); and the retaining device (98) is unitary with the second end cap (94) (column 5, lines 26-28).

Regarding claims 5 and 6, Maxwell (738) further discloses the first end cap includes a sleeve outwardly bounding the peripheral edge of the first end cap (88) and extending from the first end cap (88) toward the second end cap (94) (fig. 2) but does not disclose the orientation device being unitary with the sleeve of the first end cap (88) and projecting radially outward therefrom. Cline (768) teaches an orientation device

Art Unit: 1723

being unitary with a sleeve of a first end cap (48) and projecting radially outward therefrom (fig. 2a and 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the orientation device of Cline (768) because the device blocks rotation of the filter module relative to the housing to align the filter element within the housing (col. 1, lines 16-30).

Regarding claims 7-10, Maxwell (738) further discloses the retaining device (98) comprises a plurality of individual elements (114) fixed to and integral with the second end cap (94) and projecting radially outward therefrom (column 5, lines 58-62); the retaining device (98) projects axially outward from the second end cap (94) (column 5, lines 26-28); the retaining device (98) projects radially outward from the second end cap (94) (column 5, lines 58-62); and the second end cap (94) includes a sleeve outwardly bounding the peripheral edge of the second end cap (94) and extending a short distance from the second end cap (94) toward the first end cap (88), the retaining device (98) being unitary with the sleeve of the second end cap (94) and projecting radially outward therefrom (column 5, lines 26-28, 58-62).

Regarding claim 16, Maxwell (738) does not disclose an annular locating sleeve. Mack (766) teaches an annular locating sleeve (20) projecting outwardly from an annular body portion, radially outwardly spaced from a sealing device (21) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the sleeve of Mack (766) because the sleeve seals the cartridge to a retaining collar (9) (col. 3, lines 39-44).

Regarding claim 11, Maxwell (738) discloses a filter assembly (10) comprising: a housing (12) having a threaded open end (34) a closed end (32) and a central axis (fig. 2, column 4, lines 30-33), a first port (16a) to direct fluid into the housing and a second port (18a) to direct fluid from the housing (column 4, lines 13-17), the housing including a cup shaped cover (14&15) with threads (35); the cover (14&15) including retaining means (118) internally of the cover (14&15) (fig. 4, column 5, lines 62-65), a filter element removeably disposed within the housing (14&15) (column 5, lines 1-3) the filter element including a ring of filtration media (80) circumscribing a central axis and defining a central cavity (82) (column 5, lines 6-8), the filter ring (80) having a first and second end (fig. 2), a first end cap (88) at the first end of the media ring (80) and an annular body portion defining a central opening of the first end cap (88) for receiving a cylindrical component (93) and an annular seal (92) bounding the central opening of the first end cap (88) (column 5, lines 12-19), a second end cap (94) at the second end of the media ring (80) includes retaining means (98) the retaining means of the second end cap (94) inter engage with the retaining means (118) of the cover (14&15). Maxwell (738) does not disclose the housing including orientation means permanently fixed to and integral with an internal surface of the housing and projecting outwardly therefrom, or a vent orifice in the first end cap into the central cavity, or an orientation means integral with the first end cap cooperating with the orientation means of the housing. Mack (766) teaches a filter element including a vent orifice (36) into the central cavity in the annular body of a first end cap (15') spaced radially outward from a sealing device (21) (fig. 1). It would have been obvious to one having ordinary skill in the art at the

Art Unit: 1723

time the invention was made to use the vent orifice as taught by Mack (766) because the vent allows air trapped in the fuel is not discharged to the external environment nor is it conveyed toward the injection pump (col. 1, lines 45-56). Cline (768) teaches a housing (30) including orientation means (72) integral with an internal surface of the housing and projecting outwardly therefrom (fig. 2a). Cline (768) also teaches orientation means (78) integral with the first end cap (48) cooperating with the orientation means of the housing to rotationally orient the filter element with respect to the housing (col. 1, lines 16-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the orientation device of Cline (768) because the device blocks rotation of the filter module relative to the housing to align the filter element within the housing (col. 1, lines 16-30). The limitation of the orientation means remaining with the element as the element is removed is a process step and does not add a structural limitation beyond the previous limitation of the orientation means being permanently fixed to the filter end cap.

Regarding claim 18, Maxwell (738) does not disclose an annular locating sleeve. Mack (766) teaches an annular locating sleeve (20) projecting outwardly from an annular body portion, radially outwardly spaced from a sealing device (21) and the housing (5) includes a corresponding annular channel located so as to receive the locating sleeve (20) when the filter element is located in the housing (5) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the sleeve of Mack (766) because the sleeve seals the cartridge to a retaining collar (9) (col. 3, lines 39-44).

Regarding claim 12, Maxwell (738) discloses a filter assembly (10) comprising: a housing (12) having a threaded open end (34) a closed end (32) and a central axis (fig. 2, column 4, lines 30-33), a first port (16a) to direct fluid into the housing and a second port (18a) to direct fluid from the housing (column 4, lines 13-17), the housing including a cup shaped cover (14&15) with threads (35); the cover (14&15) including a retaining device (118) internally of the cover (14&15) and projecting radially outwardly therefrom (fig. 4, column 5, lines 62-65), a filter element removeably disposed within the housing (14&15) (column 5, lines 1-3) the filter element including a ring of filtration media (80) circumscribing a central axis and defining a central cavity (82) (column 5, lines 6-8), the filter ring (80) having a first and second end (fig. 2), a first end cap (88) at the first end of the media ring (80) and an annular body portion defining a central opening of the first end cap (88) for receiving a cylindrical component (93) and an annular seal (92) bounding the central opening of the first end cap (88) (column 5, lines 12-19), a second end cap (94) at the second end of the media ring (80) includes a retaining device (98) integral with the second end cap (94) and projecting outwardly therefrom (column 5, lines 58-62) the retaining device of the second end cap (94) inter engage with the retaining device (118) of the cover (14&15). Maxwell (738) does not disclose the housing (12) including an orientation device integral with an internal surface of the housing (12) and projecting radially inwardly therefrom, or a vent orifice in the first end cap (88) into the central cavity (82), or an orientation device integral with the first end cap (88) projecting radially outwardly therefrom and cooperating with the orientation device of the housing (12). Mack (766) teaches a filter element including a vent orifice



(36) into the central cavity in the annular body of a first end cap (15') spaced radially outward from a sealing device (21) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the vent orifice as taught by Mack (766) because the vent allows air trapped in the fuel is not discharged to the external environment nor is it conveyed toward the injection pump (col. 1, lines 45-56). Cline (768) teaches a housing (30) including an orientation device (72) integral with an internal surface of the housing and projecting radially inward therefrom (fig. 2a), also an orientation device (78) integral with a first end cap (48) cooperating with the orientation device of the housing to rotationally orient the filter element with respect to the housing (fig. 2a, col. 1, lines 16-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the orientation device of Cline (768) because the device blocks rotation of the filter module relative to the housing to align the filter element within the housing (col. 1, lines 16-30).

Regarding claim 13, Maxwell (738) further discloses the retaining device (118) on the cover (14&15) comprises a rib, ridge or tab (the protrusions between the grooves (118) are ribs) (fig. 6) and the retaining device (114) on the second end cap (94) comprises a pair of closely-spaced ribs, ridges or tabs for each retaining device on the cover (fig. 7).

Regarding claim 14, Cline (768) further discloses the orientation device (78) on the first end cap (48) comprises a rib, ridge, or tab (fig. 2a) and the orientation device (72) on the housing (30) comprises a rib, ridge or tab (fig. 2a).

Regarding claim 20, Maxwell (738) does not disclose an annular locating sleeve. Mack (766) teaches an annular locating sleeve (20) projecting outwardly from an annular body portion, radially outwardly spaced from a sealing device (21) and the housing (5) includes a corresponding annular channel located so as to receive the locating sleeve (20) when the filter element is located in the housing (5) (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the sleeve of Mack (766) because the sleeve seals the cartridge to a retaining collar (9) (col. 3, lines 39-44).

Regarding claim 22, Maxwell (738) discloses a filter element comprising: a ring of filtration media (80) circumscribing a central axis and defining a central cavity (82) the filtration media ring having a first end and a second end, a first circular end cap (88) having an inner surface sealingly bonded to the first end of the media ring (80), the first end cap including an annular body portion defining a central opening into the central cavity of the media, sealing means (92), which performs the identical function as the lip seal disclosed herein in substantially the same way with substantially the same results, bounding the central opening for sealing against a circular collar, and a second circular end cap (94) sealingly bonded to the second end of the media ring, retaining means (98), which performs the identical function as the rib disclosed herein in substantially the same way with substantially the same results, fixed to and integral with the second end cap (94) and projecting outwardly therefrom (column 5, lines 25-27). Maxwell (738) does not disclose an annular locating sleeve, a vent orifice in the annular body of the first end cap into the central cavity or an orientation device permanently fixed to and

Art Unit: 1723

integral with the first end cap and projecting radially outward therefrom. Mack (766) teaches a filter element including a vent orifice (36) into the central cavity in the annular body of a first end cap (15') spaced radially outward from a sealing device (21) intermediate the sealing device (21) and a media ring (4') the vent located between the sealing device and a locating sleeve (20') (fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the vent orifice as taught by Mack (766) because the vent allows air trapped in the fuel is not discharged to the external environment nor is it conveyed toward the injection pump (col. 1, lines 45-56) and the locating sleeve seals the cartridge to a retaining collar (9) (col. 3, lines 39-44). Cline (768) teaches a filter element (14) with an orientation device (78) permanently fixed to and integral with a first end cap (48) and projecting radially outward therefrom (fig. 2 and 2a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the orientation device of Cline (768) because the device blocks rotation of the filter module relative to the housing to align the filter element within the housing (col. 1, lines 16-30). The limitation of the orientation means remaining with the element as the element is removed is a process step and does not add a structural limitation beyond the previous limitation of the orientation means being permanently fixed to the filter end cap.

***Allowable Subject Matter***

2. Claims 17, 19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 17, 19 and 21 recite the limitation of the locating sleeve including a notch located in radial alignment with the vent orifice. Mack '766 teaches the vent orifice and the locating sleeve but does not teach a notch in the sleeve. It would not have been obvious to one of ordinary skill in the art to put a notch in the locating sleeve radially aligned with the vent orifice as taught by Mack and is therefore allowable subject.

### ***Conclusion***


3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Kurtz whose telephone number is 571-272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bk 12/27/06

  
W. L. WALKER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700